REMARKS

An Abstract has been added.

The specific objections to the specification are attended to above. However, further correction, if still required, is deferred pending allowance of the claims.

The objection to claim 11 is attended to above.

The rejection of claim 1 under 35 U.S.C. 102 for anticipation by the applicant's prior patent 5,713,417 (hereafter Sundholm) is traversed.

Figure 1 of Sundholm discloses a fire fighting apparatus intended for ship cabins and other relatively small spaces, as appears from column 2, especially lines 53 and 32. Figure 2 shows an alternative to Figure 1. Figures 1 and 2 do not show a fire fighting apparatus for an engine room of a ship, but Figures 3 and 4 show such an application.

It is submitted that the embodiment of Figure 1 does not show an apparatus having a long tube whereto a gas source is coupled. Each tube 3 in Figure 1 is intended to serve one ship cabin with two spray heads 1 and, additionally, a spray head 1a in the corridor. Each cabin has its own liquid source which is constituted of an accumulator 2.

The accumulator 2 comprise a gas space 7 and a liquid space 6. It is obvious for a person skilled in the art that the tubes 3 have a small diameter: typically the tube has an outer diameter of 12 mm and inner diameter of 9.6 mm and the length of the tube 3, for each accumulator, is 10 to 15 m. Such a length of the tube 3 has a volume of only 0.7 to 1.1 liters. In the specification it is stated, as an example, that the volume of the accumulator 2 is 20 liters and a liquid flow of 14 liters is achieved. This means that the volume of the gas space of the accumulator is 4 liters.

As appears from the above, the overwhelming amount of water in the Sundholm fire fighting apparatus is in the accumulators. The tube 3 does not constitute a volume of substantial extent as stated in present claim 1. Also, the accumulators 3 in Sundholm comprise, as mentioned before, a gas space and a liquid space and in claim 1 defining the present invention it is stated that the hydraulic accumulator is constituted of a gas source and the long tube. Nowhere in the citation is it mentioned or taught that liquid in any tube together with a gas source forms a hydraulic accumulator.

From the Sundholm citation one can see that increasing the number of spray heads also calls for a greater number of hydraulic accumulators each having a liquid space, e.g. Figures 2 to 4, and column 3, line 30. Of these figures, Figures 3 and 4 show fire fighting apparatuses for engine rooms of ships or similar places. In engine rooms, the main amount of water is not in the tube system (25), either, because the accumulators (26; 41, 41a) are in practice relatively close to the pipe system 25 and the spray heads, and because a number of accumulators (26, 27; 41, 41 a) are positioned as a package close to each other. Still further, the volume of the accumulators is disclosed to be relatively big: each accumulator has a volume of 50 liters (column 4, line 44). The volume of the pipe system (25) is - as in Figure 1 - only a minor fraction of the liquid volume and also gas volume of the accumulators and the pipe system 25 does not constitute a volume of substantial extent as stated in claim 1 defining the present invention.

From Figures 2 and 5 (and the corresponding text) of the present specification, one can see that the gas sources are positioned along the long tube at spaced intervals (e.g. at a distance of 1 km as mentioned on page 5, line 3) and, therefore, the pressure losses can be kept to an acceptable level (as mentioned on page 2, lines 26-27), which is an important feature in applications such as long tunnels.

Reconsideration and allowance are, therefore, requested.

Respectfully submitted,

William R. Evans
c/o Ladas & Parry
26 West 61st Street
New York, New York
Reg. No. 25858
Tel. No. (212) 708-1930